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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/845,803

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Eldad Zeira

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3229

24374

7590

12/29/2004

VOLPE AND KOENIG, P.C.

DEPT. ICC

UNITED PLAZA, SUITE 1600

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PHILADELPHIA, PA 19103

EXAMINER

JAIN, RAJ K

ART UNIT

PAPER NUMBER

2664

DATE MAILED: 12/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/845,803

Applicant(s)

ZEIRA ET AL.

Examiner

Raj Jain

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 5/1/00.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 May 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Objections***

Claim 2 is objected to because of the following informalities: The claim states "at step" at end of the sentence but no particular step is identified, furthermore, the step starts with step "f", it appears the step should have been labeled as step "e". Accordingly step "g" in Claim 3 should be step "f". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Endo (US006035210A ) hereafter Endo, in view of Miya et al (US 200200161) hereafter Miya.

Regarding claim(s) 1 & 4, Endo discloses a method and system for controlling downlink transmission power levels in a spread spectrum communication system, the system comprising of:

-receiving at a user equipment (UE) 202 (see Fig 2) a downlink communication from a base station and determining an error rate of the received communication (see Fig 2, col 3 lines 30-35, the mobile determines an error rate using frame error rate (FER) of the forward channel radio signal received from the base station.);

-producing power level adjustments based in part on the error rate (see col 3 lines 53-67, based on reported FER values by the mobile to the base station, power level adjustments are made accordingly.),

-transmitting an uplink communication from the UE to the base station including the power level adjustments and (see Figs 2, and col 3 lines 55-65, col 4 lines 17-36, the UE or mobile transmits an uplink power level adjustment by sending instruction information to increase or decrease power by comparing the received field strength against expected field strength.); and

-setting a transmission power level in said downlink communication in response to said power level adjustments (see Figs 2 and 3, col 10 lines 40 - col 11 line17, downlink power is set based on FER report transmitted by mobile to base station and forward channel or downlink power is increased to improve performance or decreased to reduce interference.).

Endo fails to disclose the use of time slots/frames for transmission of power control.

Miya discloses the use of time slots/frames for transmission of power control (see para 0009, 0058-0060 and Fig 5). Miya discloses the TDD frame format by time dividing the radio frequency and representing the timeslots with transmission timing "i" where  $i=0,1,\dots$  representing the individual slots. The mobile station (MS) power control is based on the SIR measurements carried out by the MS for each timeslot "i").

Time dividing the same radio frequency overcomes the affects of shadowing and other long term effects which vary slowly and are easily monitored in every slot in a frame as long as the same slot is used by the portable to transmit and receive.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to time divide the CDMA frequency band as taught by Miya and incorporate within Endo to overcome the affects of shadowing and possibly monitor the transmit and receive time slots.

Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Endo (US006035210A ) hereafter Endo, in view of Miya et al (US 200200161) hereafter Miya, further in view of Agin (US006549785B1 ) hereafter Agin.

Endo discloses a method and system for controlling downlink transmission power levels in a spread spectrum communication system.

Miya discloses the use of time slots/frames for transmission of power control (see para 0009, 0058-0060 and Fig 5).

Endo and Miya fail to disclose generating an signal to interference ratio (SIR) based on an error rate.

Agin discloses generating an signal to interference ratio (SIR) based on an error rate (see col 5 line 55 – col 6 line 10). Comparing the bit error rate (BER) against an set BER value and than increasing or decreasing the SIR target levels based on the received BER levels helps to maintain the receive signal quality at the receiver and reduce interference. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the error rate and SIR technique of

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Agin within Endo in order to reduce potential interference and increase perceived signal quality by a user.

Claims 5-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Agin (US006549785B1 ) hereafter Agin, in view of Miya et al (US 200200161) hereafter Miya.

Regarding claims 5, 8, 13, 14, 19 and 21, Agin discloses a method and system for controlling downlink transmission power levels in a spread spectrum communication system, the system comprising of:

receiving a downlink communication 46 (see Fig 4) and determining an interference power measurement for each downlink communication (see Fig 1, col1 line 33-35, col 5 lines 50-67, downlink interference power measurements are determined using the signal to interference ratio (SIR), resulting in either increasing or decreasing the downlink power level to maintain desired SIR target levels);

transmitting an uplink communication having said interference power measurement for each downlink communication ( see Fig 3, col 5 lines 50-57, uplink power measurements are transmitted to the base station after comparing the SIR values against set SIR target levels.);

setting a transmission power level for each downlink communication in response to said interference power measurement and said estimated interference power for each downlink communication (see Fig 4, col 5 lines 50-57, col 7 lines 39-51 transmission power level for each downlink is compared against set SIR target levels at

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the mobile and command sent by mobile to the base station to increase or decrease power accordingly.).

calculating an estimated interference power measurement in a downlink communication (again, see Fig 4, col 5 lines 50-57, col 7 lines 39-51 transmission power level for each downlink is estimated and compared against set SIR target levels at the mobile and command sent by mobile to the base station to increase or decrease power accordingly.); and

Agin fails to disclose the use of time slots/frames for transmission of power control.

Miya discloses the use of time slots/frames for transmission of power control (see para 0009, 0058-0060 and Fig 5). Miya discloses the TDD frame format by time dividing the radio frequency and representing the timeslots with transmission timing "i" where  $i=0,1,\dots$  representing the individual slots. The mobile station (MS) power control is based on the SIR measurements carried out by the MS for each timeslot "i").

Time dividing the same radio frequency overcomes the affects of shadowing and other long term effects which vary slowly and are easily monitored in every slot in a frame as long as the same slot is used by the portable to transmit and receive.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to time divide the CDMA frequency band as taught by Miya and incorporate within Agin to overcome the affects of shadowing and possibly monitor the transmit and receive time slots.

Regarding claim 6, Agin discloses determining an error rate for the downlink communications and adjusting the power level based on in part on the error rate (see Fig 4, col 1 line 50—col 2 line 14, the downlink error rate is determined using bit error rate (BER) to measure the received signal quality at the mobile, power level adjustments are made to increase or decrease power by comparing against set BER levels.),

Regarding claim 7, Agin discloses modifying downlink power adjustments based on interference power measurements using on SIR target levels (see Fig 2 & 4, col 5 lines 55-67, col 7 lines 44-50).

Regarding claim 9, Agin discloses a base transceiver station or base station (see col 7 line 4).

Regarding claims 10 and 15 Agin discloses a Node B (see col 7 line 4).

Regarding claims 11, 16 and 18, Agin discloses forwarding the power level adjustments to the base station, (see Fig 3, col 5 lines 55-67, col 7 lines 2-14).

Regarding claim 12 and 17 Agin discloses a radio network controller (RNC) (see col 7 lines 2-5).

Regarding claim 20, Miya discloses storage, calculation and averaging of reception power (see 0047, 0022, the averaging power would incorporate any extra or residual power as part of the overall interference reception encountered by the user equipment).

Regarding claim 2, Agin discloses generating a signal to interference ratio (SIR) based on the error rate determined (see col 1 lines 56-66).



Regarding claims 3, Agin discloses comparing the SIR obtained with a target level, and then using that value to determine the power level adjustment (see col 5 lines 50-67).

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raj Jain whose telephone number is 571-272-3145. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 571-272-3134. The fax phone number for the organization where this application is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2600.

RJ  
December 16, 2004

A handwritten signature in black ink, appearing to read 'W. Chin', followed by a long horizontal line extending to the right.